

C 2
Frank
59

ascending path with respect to the coolant descending path at a first coolant flow rate under operation of the reactor core, and so as to enable a rise of a liquid surface of the coolant formed in the coolant ascending path until a state is obtained wherein the liquid surface is not formed in the at least one water rod by increase of a flow rate of the coolant being supplied into the fuel assembly, under operation of the reactor core with the fuel assembly disposed therein, whereby in said state coolant flows through the coolant ascending and descending paths in substantially a single phase stream.--

REMARKS

By the above amendment, claims 1-3 and 8-22 have been cancelled without prejudice and without prejudice to the right to file a divisional application directed thereto, independent claim 23 has been amended to further define features of the present invention, new dependent claims 30-36 have been added which depend directly or indirectly from claim 23, some of which claims correspond to the features of claims 4-7, and new independent claim 37 has been added. Further, claims 4-7 have been amended to depend directly or indirectly from claim 37. Applicants submit that all of these claims are readable on the elected species previously elected.

Applicants further note that applicants are in receipt of a Decision on Petition dated December 31, 1996, in response to the Petition for Complete Office Action dated July 30, 1996, and a subsequent Petition is being filed with regard to such Decision. However, such Decision apparently takes the

position that claims 24-29 are not readable on the elected species and this position is traversed. Applicants submit that the Examiner has withdrawn claims 24-29 as being directed to a different invention (i.e., a method), but that this method is readable on the elected species IB since Fig. 7A, 7B include the resistance member being the fuel rod holding portion of the lower tie plate and Fig. 7A and 7B are described throughout the specification in relation to Fig. 3A-3C and Figs. 8-15 and 17 as to the operation with Figs. 7A and 7B such that claims 24-29 are readable on the elected species IB. Thus, it is clearly improper to withdraw claims 24-29 from consideration herein in that Applicants have not received a restriction requirement at a time permitting Applicants to respond thereto.

The rejection of claims 1, 2, 4, 7 and 23 under 35 U.S.C. §102(b) as being clearly anticipated by Patterson et al; the rejection of claims 1, 2, 5, 7 and 23 under 35 U.S.C. §102(a, b, e, g) as being clearly anticipated by Matzner; the rejection of claims 1, 2, 4-7 and 23 under 35 U.S.C. §103 as being unpatentable over Patterson et al in view of either Matzner or Nelson et al; the rejection of claims 1, 2, 4-7 and 23 under 35 U.S.C. §103 as being unpatentable over Matzner in view of either Patterson et al or Nelson et al; the rejection of claims 1, 2, 4-7 and 23 under 35 U.S.C. §103 as being unpatentable over Patterson et al in view of either Matzner or Kumpf; and the rejection of claim 23 under 35 U.S.C. §103 as being unpatentable over either Matzner or Patterson et al in view of Japan 0220686; are traversed insofar as they are

applicable to the present claims, and reconsideration and withdrawal of the rejections are respectfully requested.

Applicants note that by the present amendment, independent claims 23 and 37 recite the feature of a first coolant passage formed within the at least one water rod, a second coolant passage formed outside of the at least one water rod and being provided among the fuel rods and between the at least one water rod and the fuel rods, between the upper tie plate and the fuel rod holding portion. Further, the fuel rod holding portion has a plurality of third coolant passages for introducing coolant into the second coolant passage from the region lower than the fuel rod holding portion and each of third coolant passages has a cross-sectional area smaller than a cross-sectional area of the second coolant passage at least in an area of the second coolant passage immediately above the fuel rod holding portion. These claims further define the arrangement of the coolant ascending path and the coolant descending path and the coolant inlet port and the coolant delivery port, while further defining the feature of at least the cross-sectional area of each of the third coolant passages having relation to that of the second coolant passage, to thereby provide the pressure differentials upon flow of coolant during operation of the reactor core, so as to enable the features as now set forth in the claims.

Irrespective of the contentions by the Examiner, none of the Patterson et al, Matzner, Nelson et al, Kumpf or Japan 0220686, taken alone or in any combination, disclose or teach

such claimed features in relation to the claimed operation and the cross-sectional relationship as recited in claims 23 and 37 and the dependent claims thereof, in the sense of 35 U.S.C. §102 or 35 U.S.C. §103, such that these claimed features patentably distinguish over the cited art and should now be in condition for allowance.

Since it is apparent that the now recited features are not disclosed or taught in the cited art, further discussion of the cited art is considered unnecessary and applicants submit that in setting forth a rejections, the Examiner must specifically point out how the cited art is considered to provide the claimed features.

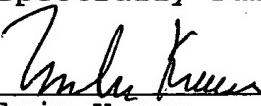
With regard to the newly added dependent claims, applicants note that these claims recite further features not disclosed in the cited art and applicants submit that all claims present in this application, which are under consideration, i.e. claims 4-7, 23 and 30-37, which are all readable on the elected species, patentably distinguish over the cited art and should now be in condition for allowance.

In view of the above amendments and remarks, issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account

No. 01-2135 (501.25507CX5) and please credit any excess fees
to such deposit account.

Respectfully submitted,



Melvin Kraus
Registration No. 22,466
ANTONELLI, TERRY, STOUT & KRAUS, LLP

MK/cec
(703) 312-6600